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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,582	12/30/2003	Jia-Chu Liu	88-2063A	8234
24114	7590	11/29/2004		
LYONDELL CHEMICAL COMPANY 3801 WEST CHESTER PIKE NEWTOWN SQUARE, PA 19073				
			EXAMINER CHEUNG, WILLIAM K	
			ART UNIT 1713	PAPER NUMBER

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/748,582

Applicant(s)

LIU ET AL.

Examiner

William K Cheung

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7, 10-16, 19, 20, 23 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 7, 10-15, 19, 20, 23 and 24 is/are rejected.
- 7) ☒ Claim(s) 3-6 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 040204.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Applicant's affirmed election of Group I invention, claims 1-7, 10-16, 19, 20, 23 and 24 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Therefore, in view of lack of traversal to restriction requirement set forth from Response to Restriction Requirement, the restriction set forth by the examiner is deemed proper and is therefore made Final.
2. In view of amendment filed October 18, 2004, the nonelected Group II invention, claims 8, 9, 17, 18, 21, 22, 25, 26 have been cancelled. Claims 1-7, 10-16, 19, 20, 23 and 24 are pending.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson et al. (US 6,620,759).

*The invention of claims 1, 2, 7 relates to a **process** comprising **polymerizing**, in the presence of a **Group 8-10 metal complex** and an **activator**, one of the monomer groups (a) through (f):*

- (a) a **vinyl monomer** selected from the group consisting of **vinyl aromatics, vinyl ethers, vinyl esters, and vinyl halides** thereof;*
- (b) a vinyl monomer selected from the group consisting of **vinyl ethers, vinyl esters, and vinyl halides**, and at least one olefin;*
- (c) a hydroxy-functional monomer selected from the group consisting of **hydroxyalkyl acrylates, hydroxyalkyl methacrylates, allylic alcohols, and alkoxylated allylic alcohols**, and at least one **alkyl or aryl acrylate or at least one alkyl or aryl methacrylate**;*
- (d) a hydroxy-functional monomer selected from the group consisting of **hydroxyalkyl acrylates, hydroxyalkyl methacrylates, allylic alcohols, and alkoxylated allylic alcohols**, at least one **alkyl or aryl acrylate or at least one alkyl or aryl methacrylate**, and at least one **olefin**;*
- (e) a hydroxy-functional monomer selected from the group consisting of **hydroxyalkyl acrylates, hydroxyalkyl methacrylates, allylic alcohols, and alkoxylated allylic alcohols**, and at least one **vinyl aromatic monomer**; or*

*(f) a hydroxy-functional monomer selected from the group consisting of **hydroxyalkyl acrylates, hydroxyalkyl methacrylates, allylic alcohols, and alkoxylated allylic alcohols**, at least one **vinyl aromatic monomer**, and at least one **olefin**.*

Johnson et al. (col. 13, line 1 to col. 16, line 46) disclose a polymerization process which involves using a Group 8-10 metal complex and an activator. Johnson et al. (col. 10, line 29-39) disclose that the process can be used to polymerize styrene and other olefins. Johnson et al. contain all the limitations of claims 1, 2, 7. Claims 1, 2, 7 are anticipated.

5. Claims 10-15, 19-20, 23, 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson et al. (US 6,620,759) with Johnson et al. (US 6,174,975) incorporated as reference.

*The invention of claims 10-15 relates to a **process** which comprises **polymerizing**, in the presence of a **Group 8-10 metal complex** and an **activator**, a **hydroxy-functional monomer** selected from the group consisting of **hydroxyalkyl acrylates, hydroxyalkyl methacrylates, allylic alcohols, and alkoxylated allylic alcohols**, at least one **alkyl or aryl acrylate or at least one alkyl or aryl methacrylate**, optionally a **vinyl aromatic monomer**, and optionally a **C<sub>2-10</sub>  $\alpha$ -olefin**.*

*The invention of claims 19-20 relates to a **process** which comprises **polymerizing**, in the presence of a **Group 8-10 metal complex** and **an activator**, at least one **vinyl ester** and at least one **C<sub>2-10</sub>  $\alpha$ -olefin**.*

*The invention of claims 23, 24 relates to a **process** which comprises **polymerizing**, in the presence of a **Group 8-10 metal complex** and **an activator**, a **hydroxy-functional monomer** selected from the group consisting of **hydroxyalkyl acrylates, hydroxyalkyl methacrylates, allylic alcohols, and alkoxylated allylic alcohols**, at least one **vinyl aromatic monomer**, and optionally at least one C<sub>2-10</sub>  $\alpha$ -olefin.*

Johnson et al. (US 6,620,759, col. 13, line 1 to col. 16, line 46) disclose a polymerization process which involves using a Group 8-10 metal complex and an activator. Johnson et al. (col. 10, line 29-39) disclose that the process can be used to polymerize styrene and other olefins. Johnson et al. (US 6,620,759, col. 1, line 52-53) disclose that the disclose process is for polymerizing olefins. Since olefins are any monomers comprising a polymerizable double bond, the disclosure to Johnson et al. generically includes all the monomer being claimed. Motivated by the expectation of success of using the disclosed catalyst for preparing a polyolefin, it would have been obvious to one of ordinary skill in art to appreciate that the teachings of Johnson et al. encompasses all compounds with a polymerizable double bond. Therefore, it would have been obvious to one of ordinary skill in art to use the process of Johnson et al. to

polymerize the readily commercially available monomers such as the monomers as claimed to obtain the invention of claims 10-15, 19-20, 23, 24.

Regarding claims 23, 24, Johnson et al. (US 6,620,759, col. 10, line 29-39) clearly indicate incorporating the monomers teachings of Johnson et al. (US 6,174,975) into the teachings of Johnson et al. (US 6,620,759). Further, Johnson et al. (US 6,174,975, col. 90, line 21 to col. 98, line 65) clearly teach using a mixture of olefinic type monomers which include an acrylic ester monomer for the disclosed polymerization process.

#### ***Allowable Subject Matter***

6. Claims 3-6, 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Johnson et al. are silent on a process comprising an isoindoline ligand.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William K Cheung whose telephone number is (571)

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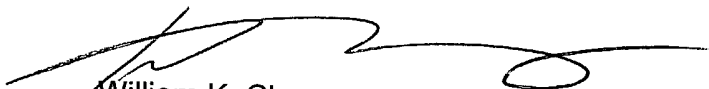
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272-1097. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



William K. Cheung

Primary Examiner

November 23, 2004

**WILLIAM K. CHEUNG**  
**PRIMARY EXAMINER**